

AMPLIFIERS USING GATED DIODES

Abstract of the Disclosure

A circuit comprises a control line and a two terminal semiconductor device having first and second terminals. The first terminal is coupled to a signal line, and the second terminal is coupled to the control line. The two terminal semiconductor device is adapted to have a capacitance when a voltage on the first terminal relative to the second terminal is above a threshold voltage and to have a smaller capacitance when a voltage on the first terminal relative to the second terminal is below the threshold voltage.

The control line is coupled to a control signal and the signal line is coupled to a signal and is output of the circuit. A signal is placed on the signal line and voltage on the control line is modified (e.g., raised in the case of n-type devices, or lowered for a p-type devices). When the signal falls below the threshold voltage, the two terminal semiconductor device acts as a very small capacitor and the output of the circuit will be a small value. When the signal is above the threshold voltage, the two terminal semiconductor device acts as a large capacitor and the output of the circuit will be influenced by both the value of the signal and the value of the modified voltage on the control line and therefore the signal will be amplified.